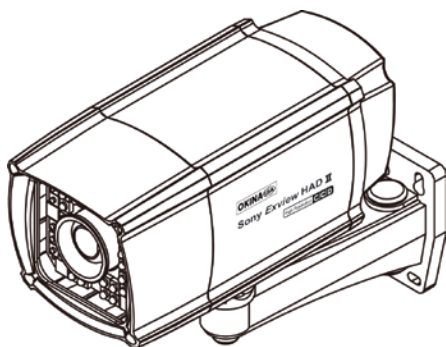


SIR36-870VF650LP

700 TVL Long Distance Smart Shift 36 IR License Plate Capture Camera



USER MANUAL

FEATURES

- 700 TVL
- 1/3" Sony Exview HAD CCD II
- 6.0~50.0mm Varifocal 1.3 Megapixel Lens
- 36 IR LED; Distance up to 200ft / 60m
- Mechanical IR Cut Filter
- 1100mA max @ Boot up
1250mA max @ IR on ; 260mA max @ IR off
- 12V DC / 24V AC
- IP67 Rating



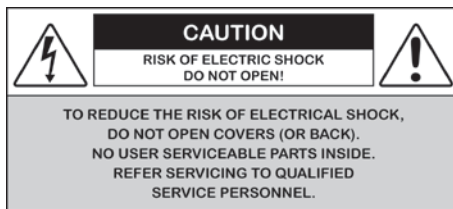
Please read the Manual before attempting to use this product.

Specifications and appearance are subject to change without notice.

**** THIS CAMERA IS DESIGNED FOR LICENSE PLATE CAPTURE ****

**L-819**

R201407-V24



Disposal of Old Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems.)

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

CAUTION

1. Never point the camera toward the sun

Do not expose the lens directly to the sun or to strong light as this may damage the pick-up device.

2. Handle this camera with care

Avoid any shock or bumping of the camera. Improper handling could damage the camera.

3. Requires a proper operating environment

This camera is designed for indoor use. The allowable temperature range for operation of this camera is between 14°F ~ 122°F / -10°C ~ 50°C.

4. Clean the front face or lens

It is recommended that the surface be cleaned every 3~6 months. Cleaning should be done by using a chamois, a very fine soft cloth, lens tissue, or cotton tipped applicator and ethanol to carefully remove any fingerprint or dust.

5. Check the power source voltage

The power source voltage should be within the specified range. (Camera must meet the specifications). Camera must be connected to a surge protector at all times.

6. Objects and liquid entry

Never push objects of any kind into this camera as this may touch dangerous voltage points of short out parts that could result in a fire or electric shock. Never spill any kind of liquid on the video product.

7. Servicing

Do not attempt to service this video product by yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all service to qualified servicing personnel.

8. Damage requiring service

Unplug this video product from the wall outlet and refer service to qualified servicing personnel under the following conditions

- When the power supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the video product.
- If the video product has been exposed to rain or water.
- If the video product has been dropped or the cabinet has been damaged.
- When the video product exhibits a distinct change in performance.

FCC STATEMENT

This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received including interference that may cause undesired operation.

* Federal Communications Commission (FCC) Statement

This Equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed

and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the ser is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

* You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

LIMITED WARRANTY

OKINA USA products are covered under warranty for one (1) year from the date of purchase. The warranty will automatically be voided if any of the following occurs:

1. Camera sticker is removed

If the camera sticker is removed, we will not be able to confirm any information regarding when and where the product was purchased. We have no other way to verify the purchase record without the serial number on the camera sticker; therefore, it should not be removed.

2. Camera is modified in any way

If the camera is scratched, damaged, or modified in a manner not described in this manual, the warranty will be voided immediately. It is the customer's responsibility to keep the camera in good condition.

3. Video or power cable is cut

The video cable and the power cable should not be tampered with. Cutting or modifying of the cables will result in termination of the warranty.

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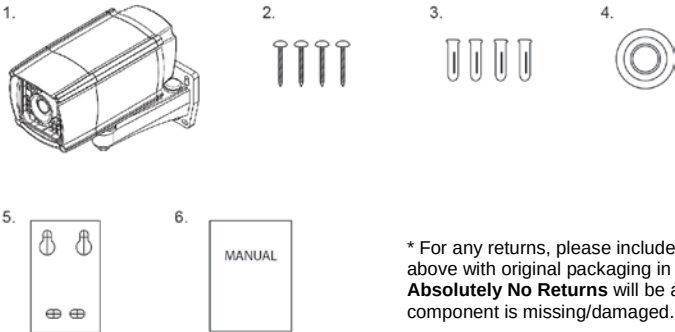
RULES TO DESIGN LICENSE PLATE CAPTURE CAMERA 17-18

RECOMMENDED CAMERA KEYBOARD CONTROLLER 18-19

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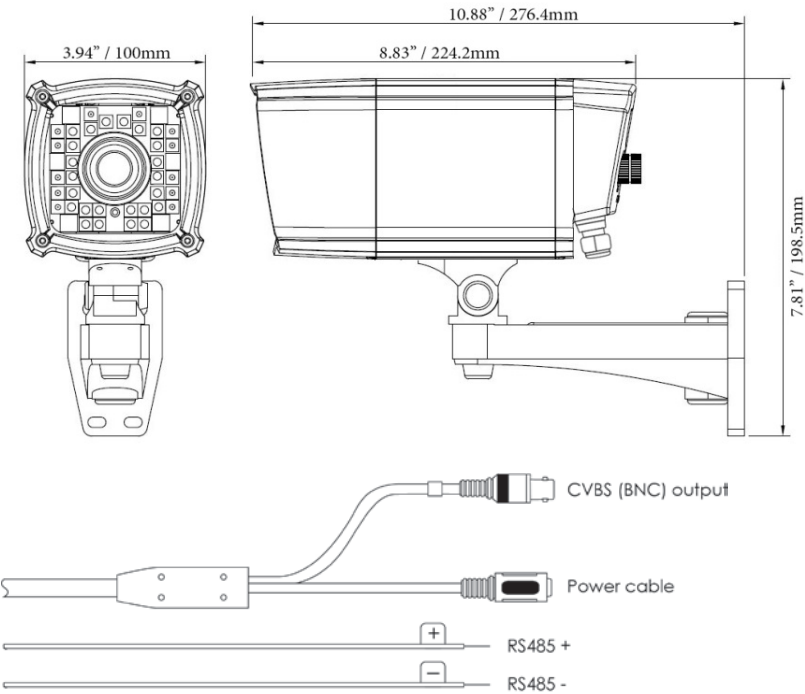
PACKAGE CONTENTS

- 1. One (1) SIR36-870VF650LP LPC Camera
- 2. Four (4) Wall Mounting Screws
- 3. Four (4) Wall Anchors
- 4. One (1) Rubber Washer
- 5. One (1) Sticker Mounting Template
- 6. One (1) User Manual



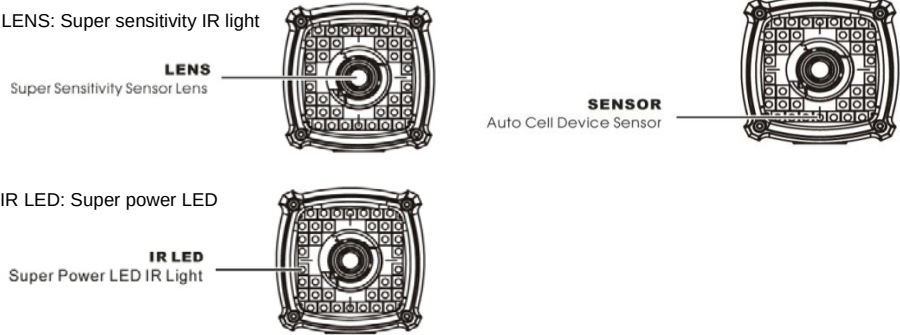
* For any returns, please include all components listed above with original packaging in **Resalable Condition**. **Absolutely No Returns** will be accepted if any component is missing/damaged.

DIMENSIONS (Unit: inches / mm)



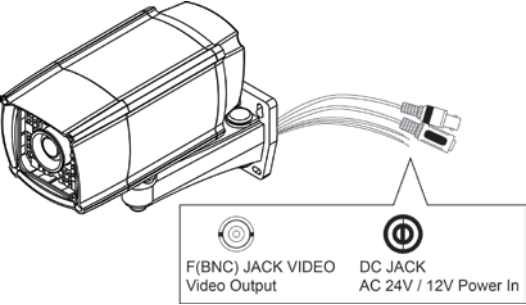
FUNCTIONS

The camera includes auto white balance mode (AWB) auto capture and color temperature.
The range is 2400°K~9600°K.
SENSOR : Auto Cell Device Sensor, the IR LED would on when night comes to make up lightness. IR LED would not on in the day, to reduce power consumption.



VIDEO, POWER AND DATA OUTPUT JACK

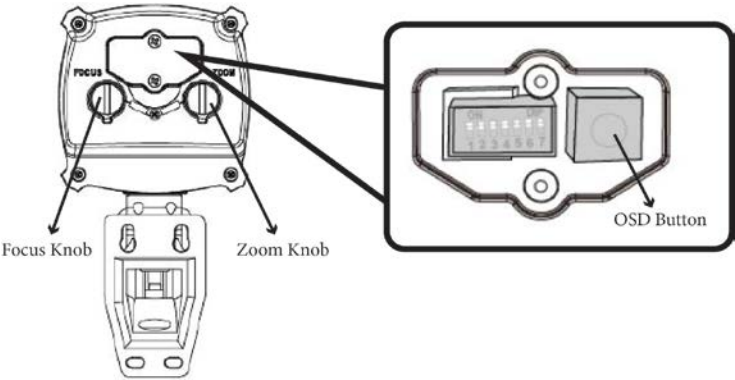
F(BNC) JACK is for video output. DC JACK is for the power in, it is necessary to use a constant voltage adapter.
Data (RS485) to connect to controller for OSD setting.



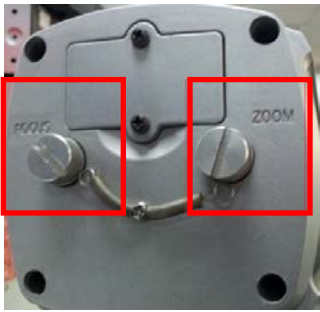
1. Please use suitable adapter DC12V $\pm$ 10 %, 1.5A. Otherwise, this product will be damaged
2. Please use AC24V $\pm$ 10%. Otherwise, this product will be damaged

LENS AND OSD ADJUSTMENT DIP FUNCTIONS

Unscrew the back of the device, the DIP switches can be seen under the cover. The DIP switches are adjustable and waterproof. The details of the functions are shown below.

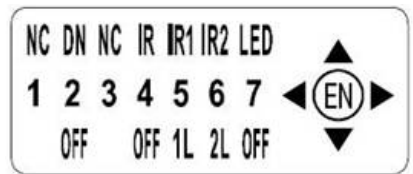


Remove the focus/zoom knob cover to access adjustment knobs.



OSD KEYPAD

1. NC (No function)
 2. D/N, day and night switcher
 3. NC (No function)
 4. Reflection LED switch (for 18 pcs of reflection LED) : IR on / IR off
 5. Piranha LED (for 18 pcs of Piranha LED) low / high power switch : IR1 (high) / IR low (1L)
 6. Reflection LED (for 18 pcs of reflection LED) low/high power switch : IR2 (high) / IR low (2L)
****IR Distance 250ft / 80m (36pcs IR LED: 18pcs Piranha / 18pcs Reflection)****
 7. LED light on / off (is the IR light on control board)
 8. OSD direction / enter button



OSD MENU

MAIN MENU

1. LENS	DC↓
2. EXPOSURE	↓
3. BACKLIGHT	OFF
4. WHITE BAL	ATB
5. DAY&NIGHT	EXT↓
6. SMART 3DNR	OFF
7. DE-FOG	OFF
8. FUNCTION	↓
9. EXIT	SAVE↓

Setup menu description.

Menu Item	Description
Lens	Defines the lens brightness and iris speed.
Exposure	Defines the method of iris control.
Backlight	Defines the highlight compensation (HLC), backlight compensation (BLC), and high spotlight compensation (HBLC) set up.
White Balance	Defines the white balance (WB) set up
Day & Night	Defines the day/night (D/N) set up
Smart 3DNR	Defines the digital noise reduction set up
De-fog	Defines the defog set up
Function	Defines motion detection, privacy, digital effect, image adjustment, autofocus, language and OSD color set up
Exit	Exits the menu and returns to live mode

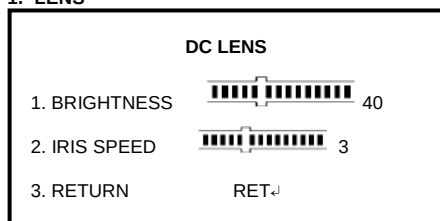
To access the setup menu:

1. Press the OSD control pad (Enter) or Coaxial Control Enter button to access the Main menu and its submenus.
2. Push the pad up, down, left and right or Coaxial Control TELE, WIDE, NEAR and FAR button to move between menu options.
3. Press the OSD control pad Coaxial Control Enter button to select an option.
4. When is a sub menu, select "RETURN" to return to the previous menu.
5. To exit the Main menu, move the cursor to EXIT at the bottom of the screen and press Enter. All changes are saved.

Select the lens

In the Setup menu, go to Lens and select the type of lens used with the camera. Select DC to adjust the lens setting manually.

1. LENS

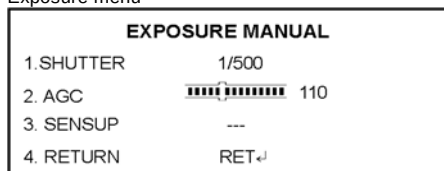


1-1 Brightness: Select the Brightness level, value from 1 to 100.

1-2 Iris Speed: Select the Iris speed, value from 1 to 5.

2. EXPOSURE

In the Setup menu, go to Exposure and press Enter, the below figure a shows the different options available:
Exposure menu



2-1 Shutter

2-1-1 1/60: Fixed shutter(1/50 for PAL, 1/60 for NTSC)

2-1-2 MANUAL: defines manual shutter value. Select a higher value to see movement and a lower value to see clearer images. The values range from 1/50(1/60) to 1/100000

※ Shutter speed corresponding with car speed

Shutter Speed	Car Speed	Camera to Object Distance
1/60 ~ 1/120	6~12mph / 10~20km	100~130ft / 30~40m
1/150 ~ 1/300	18~37mph / 30~60km	50~65ft / 15~20m
1/310 ~ 1/500	37~50mph / 60~80km	15~30ft / 5~10m

* The table above is only for reference.

2-1-3 FLK: flicker mode avoids interference from light sources.

2-1-4 AUTO: the camera sets the optimum shutter speed. User can define the maximum shutter speed in AUTO mode. The values range from FLK to 1/100000.

2-2 AGC

Adjust the maximum automatic gain control level, used in low-high conditions with the iris fully open. The values range from 0~255.

2-3 Sens-up

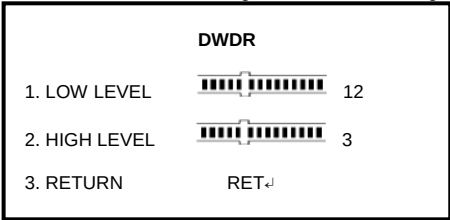
The setting refers to the amount of light being allowed to load on the sensor from 2-times the "normal" light up to 256-times the "normal" light. This method can allow for brilliant, clear color images to be taken in nearly total darkness. The values range from x2 to x256.

3. BACKLIGHT

In the setup menu, go to Backlight and select the options (DWDR, HLC, BLC, or OFF) to be modified in the menu. Note this can be set up only if DAY & Night is on Color mode.

3-1 DWDR Menu

Digital wide dynamic range (DWDR) allows you to see details of objects in shadows of details of objects in bright areas of frames that have high contrast between light and dark areas such as the headlights of passing car.

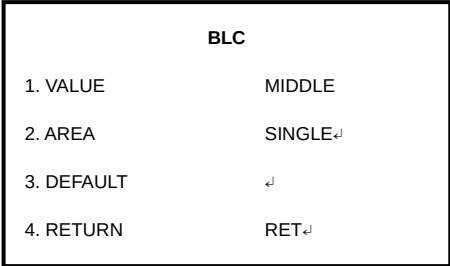


3-1-1 Low level: Set the low level of DWDR. The values range from 0 to 15

3-1-2 HIGH level: Set the high level of DWDR. The values range from 0 to 15

3-2 BLC Menu

BLC(backlight compensation) can improve image quality when the background illumination is high. It prevents the object in the center from appearing too dark.



3-2-1 Value: set the value level of backlight compensation. The values range from low to high.

3-2-2 Area: set the area of the backlight compensation by position and the size. If need to define two backlight areas, please select Double.

3-2-3 Default: reset to default the backlight compensation setting and area.

3-3 HSBLC Menu

HSBLC (high spotlight backlight compensation) masks strong light sources, giving darker areas more detail. It is often used to help identify vehicle license plate numbers, for example. Especially users can adjust and select the special requirements area to observe the target object under the strong spots of light exist.

HSBLC	
1. GAIN	 50
2. MODE	NIGHT ONLY
3. MASK LEVEL	 70
4. DEFAULT	↓
5. M. SKIP AREA	OFF
6. RETURN	RET ↓

3-3-1 Gain: adjust gain value. The values range from 0 to 100.

3-3-2 Mode: only when the HSBLC is enabled. It can be set to Night ONLY or ALL DAY.

3-3-3 Mask level: define the mask level. The values range from 0 to 100.

3-3-4 Default: reset to default the backlight compensation setting and area.

3-3-5 Mask skip area: set the value to ON or OFF to enable or disable mask skip area.

4. WHITE BAL

White balance(WB) tells the dome camera what the color white looks like. Based on this information, the dome camera will then continue to display all colors correctly even when the color temperature of the scene changes such as from daylight to fluorescent lighting., for example.

In the setup menu, go to White Bal and select the options to be modified:

Menu Item	Description
ATW	ATW(automatic tracing white balance) will be used depends on the lighting condition selected. It ensures reliable color reproduction when lighting conditions change frequently.
AWB	AWB(auto white balance). The camera adjusts the WB itself
AWC –SET	WB is automatically adjusted to the current environment and lock it at this value
MANUAL	Manually adjust the white balance by blue gain only. The red gain is automatically adjusted when the blue gain is changed. Only use this function when there is steady light.

MANUAL WB

1. BLUE  31

2. RED  20

3. RETURN RET 

5. DAY & NIGHT

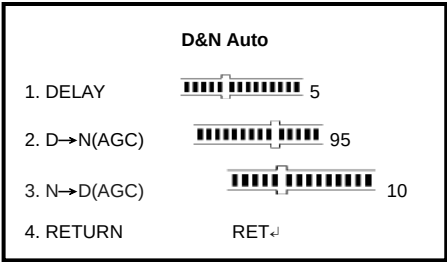
In the main menu, select Day & Night to open the day/night menu. The Day & Night mode has four options: Auto, Ext. B/W and Color.

5-1 Auto Mode

Delay: This is the time in seconds before Day $\leftarrow$ Night switches. A long delay response would be used, for example, to avoid switching from Night to Day mode when car headlights pass in front of the camera. The values range from 0 to 15.

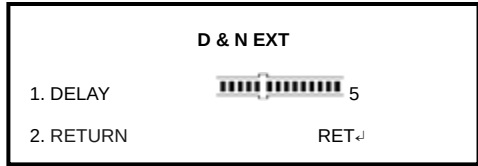
Day → Night: Set the threshold level on how dark it should be before switching from Day to Night mode. Lower (Higher) value makes the camera switched from Day to Night at lower (higher) illumination. The values range from 16 to 176.

Night → Day: Set the threshold level on how light it should be before switching from Night to Day mode. The values range from 0 to 160.



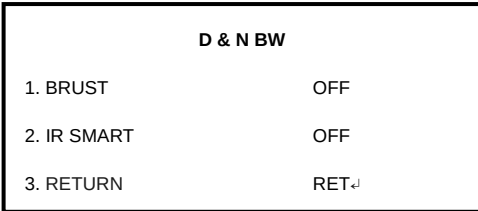
5-2 Ext mode

Select Ext to manually set the time in seconds before Day↔Night switches. The values range from 0 to 15



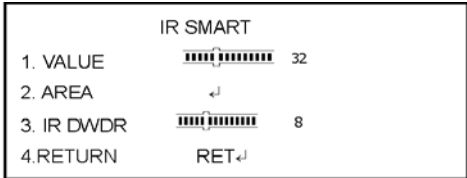
5-3 B/W Mode

Select BW to manually set the camera to black and white mode.



- 5-3-1 Burst: Enable/disable the color burst component of the video signal when the camera switches to B/W.
- (1) ON mode maintains the same color signal in B/W so that the video signal provides better compatibility with certain color equipment.
- (2) OFF mode removes the color burst signal B/W video and increase the total TV lines.

5-3-2 IR Smart Mode



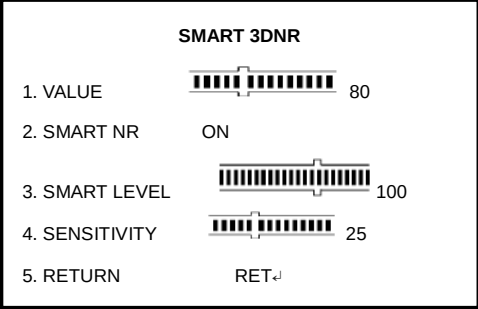
- 5-3-2-1 Value of this is for Light suppression form 0 to 100.
- 5-3-2-2 AREA setup; you can set up which location will be the base for detection foundation. "Position", "size" by using sticks control "up", "down", "lift", "right" four way.
- 5-3-2-3 IR DWDR; Normally DWDR is for light balance in day time, but this function is for night time to balance the light source, Value from 1 to 15.

5-4 Color Mode

Select Color to manually set the camera to color (day) mode.

6. SMART 3DNR

Smart 3D noise reduction reduces the background noise in a low luminance environment with 2D + 3D filtering system In the main menu, select SMART 3DNR to set up noise reduction.



6-1 Value

Set the desired 3DNR value. The values range from 1 to 200

6-2 Smart NR

Enable or disable the smart NR. Three dimension noise reductions.

6-3 Smart level

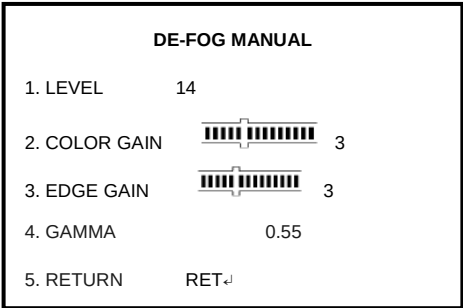
Set Smart NR level, the values range from 1 to 200

6-4 Sensitivity

Set the Smart NR sensitivity for activation. The values range from 1 to 200

7. DE-FOG

The feature will help to improve visibility of camera during poor weather conditions, e.g., foggy, smog. In the main menu, select DE-FOG to enable the feature. There are three options: Off, auto and manual.



7-2-1 Level: set the level of de-fog. The values range from 0 to 31.

7-2-2 Color gain: set the level of color gain. The values range from 0 to 10

7-2-3 Edge gain: set the level of edge gain. The values range from 0 to 10

7-2-4 Gamma: set the level of gamma. The values range from 0.05 to 1.00

8. FUNCTION

There are additional functions available in this section. In the main menu, select function and press enter, the below figure shows the different options available.

FUNCTION	
1. MOTION	OFF
2. PRIVACY	OFF
3. D-EFFECT	↵
4. IMAGE ADJ	↵
5. COMM ADJ	↵
6. SYNC	INT
7. LANGUAGE	ENGLISH
8. OSD COLOR	1
9. RETURN	RET↵

Menu Item	Description
Motion	Set the motion detection
Privacy	Set the privacy mask
D-effect	Set digital effect
Image adj	Set the image adjustment
Comm adj	Set the communication protocol settings
Sync	Set the synchronization/ Line lock in 24V AC
Language	Set the OSD language
OSD color	Set the OSD color
Return	Exits the menu and returns to live mode

8-1 Set Motion Detection

In the function menu, go to motion and press Enter, the below figure shows the different options available.

MOTION	
1. AREA	1
2. AREA DISPLAY	ON ↵
3. VALUE	■■■■■■■■ 95
4. MOTION VIEW	ON
5. RETURN	RET↵

8-1-1 Area: Select the motion detection zone (AREA1, AREA2, AREA3 and AREA4) that you want to configure. The selected zone will keep blinking.

8-1-2 Area display: Choose whether to enable motion detection for the selected zone. If enabled, you can also customize the position and size of the zone.

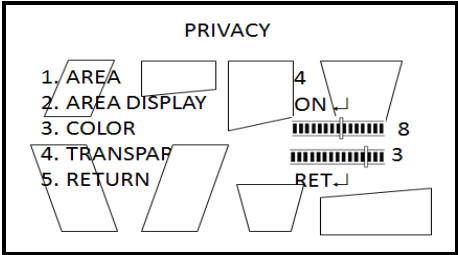
8-1-3 Value: Set the sensitivity level for the motion trigger. When Sensitivity level is high, motion detection can be triggered even by the slightest of movement. The values range from 0 to 100.

8-1-4 Motion view: Choose whether to show motion blocks when the camera detects motion in the selected zone.

8-2 Privacy Setup

With this function, you can choose to mask areas that you want to hide on the screen to protect your privacy. You can mask up to 8 areas using a variety of colors

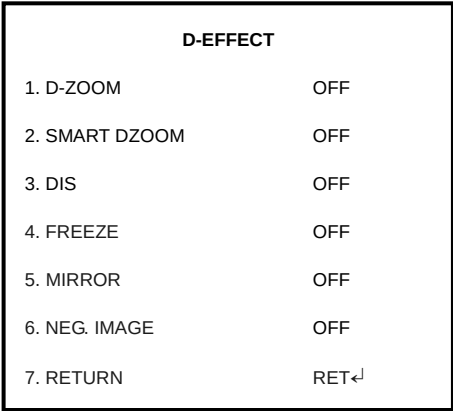
In the function menu, go to privacy and press Enter, the below figure shows the different options available



- 8-2-1 Area: Select the privacy mask (AREA1 to AREA8) that you want to configure. Each privacy mask is already associated with a pre-selected color which you can change using the COLOR setting.
- 8-2-2 Area display: Choose whether to enable the selected privacy mask. If enabled, you can also customize the position and size of the privacy mask.
- 8-2-3 Color: defines the color of the privacy mask. There are 16 colors available.
- 8-2-4 Transpar: defines the level of transparency of the privacy mask. The values range from 0 to 3.

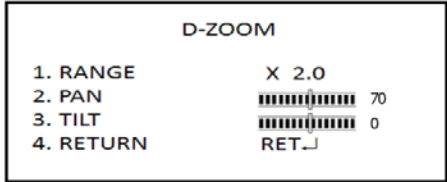
8-3 Digital Effect Setup

In this function menu, go to D-EFFECT and press Enter. The figure below shows the different options available.



8-3-1 D-Zoom

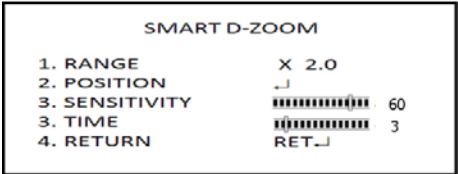
When the digital zoom is enabled, in live video the camera will zoom in then zoom out on a specific area chosen by user



- 8-3-1-1 Range: digital zoom in / out. The values range from x1 to x32
- 8-3-1-2 Pan: Set pan location when D-zoom is activated. The values range from -100 to +100
- 8-3-1-3 Tilt: Set tilt location when D-zoom is activated. The values range from -100 to +100

8-3-2 Smart D-Zoom

When a motion is detected in a specific area chosen by user, it will zoom in on the area then zoom out



- 8-3-2-1 Range: set the zoom in / out. The values range from x2 to x5.
- 8-3-2-2 Position: defines the zoom area. When a motion is detected, it can automatically zoom in/out.
- 8-3-2-3 Sensitivity: set the sensitivity level for activation (ranged from 0 ~100).
- 8-3-2-4 Time: Defines the desired stay time value for display of zoom in/out (0~15 seconds)

8-3-3 DIS
The DIS function (digital image stabilizer) helps to neutralize light camera vibrations.

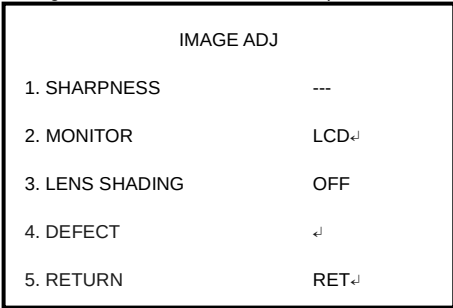
8-3-4 FREEZE
The FREEZE function helps to hold the image to analyze precisely.

8-3-5 MIRROR
The MIRROR function helps change the orientation of the image: horizontally reversed (MIRROR), upside down (V-FLIP) or horizontally reversed upside down (ROTATE). Using this mode does not affect the orientation of text on the screen.

8-3-6 NEG. IMAGE
The NEG IMAGE Display the image in a negative exposed format

8-4 Image Adjustment

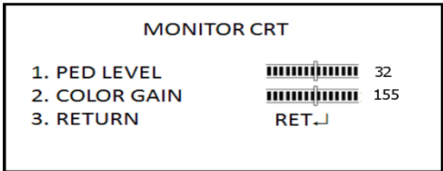
The figure below shows the different options available



Sharpness: defines how crisp your images will be. Setting the sharpness too high will make your pictures look pixelated, like old computer graphics. On the other hand, setting the sharpness too low will make everything look soft and blurry. The values range from 0 to 31.
In the image adjustment menu, select sharpness to change the value by pressing LEFT or RIGHT.

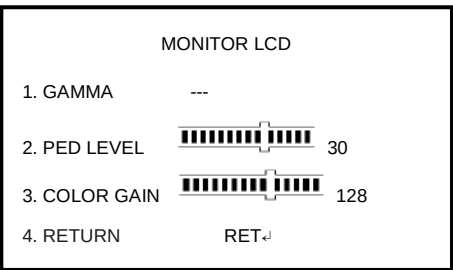
Monitor: Select the monitor type which is closest to the type you are using. In the Monitor submenu, you can also manually adjust GAMMA, BLUE GAIN, and RED GAIN levels for the selected monitor type.

8-4-1 CRT Mode



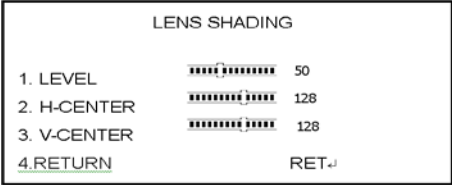
Ped level: defines the master pedestal level value. The values range from 0 to 63.
Color gain: Adjust the saturation of the color from off (black & white) (0) to oversaturated (255)

8-4-2 LCD Mode



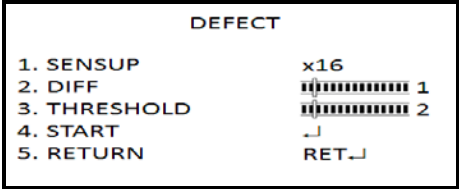
Gamma: Gamma correction controls and adjusts the overall brightness of an image for consistency. The values range from 0.05 to 1.00
Ped level: defines the master pedestal level value. The values range from 0 to 63.
Color gain: Adjust the saturation of the color from off (black & white) (0) to oversaturated (255)

8-4-3 Set Lens shading:
Enable to brighten the edges of the camera image.



Level: set the level of lens shading correction. The values range from 0 to 60.
H-Center: set center location in horizontal side. The values range from 0 to 255.
V-Center: set center location in vertical side. The values range from 0 to 255

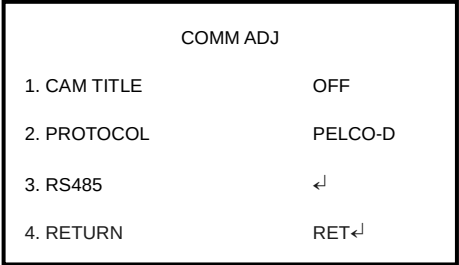
8-4-4 Defect: In case, the camera's image sensor may have a certain number of defective pixels., which could be due to operation conditions responding to light exposure differently than surrounding pixels. Which the Defective Pixel Correction (DPC) function, you can enable the camera to digitally correct defective pixels using its image signal processor.



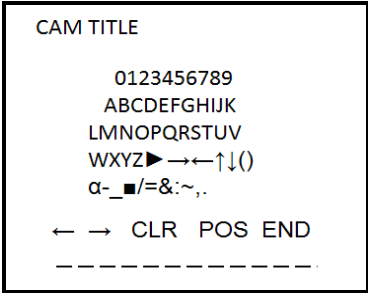
8-4-4-1 Sensup: Adjust the magnification of existing light sources to make it easier for the camera to pick up defective pixels. If set too strong, the camera can mistake regular noise as defective pixels. The values range from x4 to x128.
8-4-4-2 Diff: defines difference value against around pixels to find dead pixel. It can find big size of dead pixel with bigger values. The values range from 0 to 3.
8-4-4-3 Threshold: defines threshold value. The values range from 0 to 4.
8-4-4-4 Start: Perform STATIC DPC. The camera closes the lens automatically and detects defective pixels that exceed the specified level.

8-5 Setup the Protocol Adjustment

In function menu, go to comm adj, the below figure shows the different options available.



8-5-1 Set Camera title
The camera ID displayed on-screen can have up to 53 characters.



To enter a character, move the cursor to the desired character and press Enter & select it. It appears in the input line. Repeat the process until all characters are entered.

To move the character, input position in the input line, move the cursor in the command line to ← or → and press Enter.

To clear the input line, move the cursor to CLR and press Enter.

To delete a character in the input line, select the character so that it blinks. Then move the cursor to CLR on the command line and press Enter.

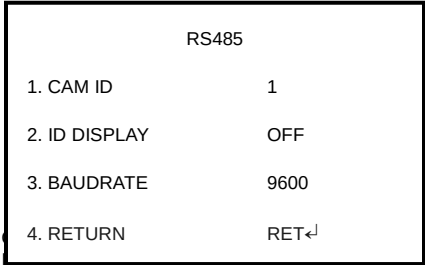
To position the camera ID on-screen, move the cursor to POS and press Enter. The menu will then disappear on-screen and the camera ID will be displayed on the monitor. Use the menu button to move the camera ID to the desired position.
Press Enter. The menu will reappear. Select Return to return to the previous menu.

8-5-2 PROTOCOL

Two protocols are available for remote control with a RS485 controller or keyboard Pelco-D and Pelco-P, use the LEFT or RIGHT to choose the protocol

8-5-3 RS485

This function allows you to configure the camera's RS485 protocol settings.



from 1 to 255.

en. Press LEFT or RIGHT enable or disable.

Baud rate: defines the baud rate between camera and controller. The values range from 2400 to 57600.

8-6 SYNC INT

Use the Sync menu to display the current synchronization mode. Only one option available: Internal (DC12V).

8-7 OSD language

16 languages are available, press RIGHT or LEFT to choose the language.
ENGLISH, KOREAN, JAPANESE, CHINESE TRADITIONNAL, CHINESE SIMPLIFIED, RUSSIAN, FRENCH, ESPANOL, ITALIAN, PORTUGUESE, DUTCH, GERMAN, POLISH, TURKISH, HEBREW, ARABIC

8-8 OSD COLOR

Value from 1~6,

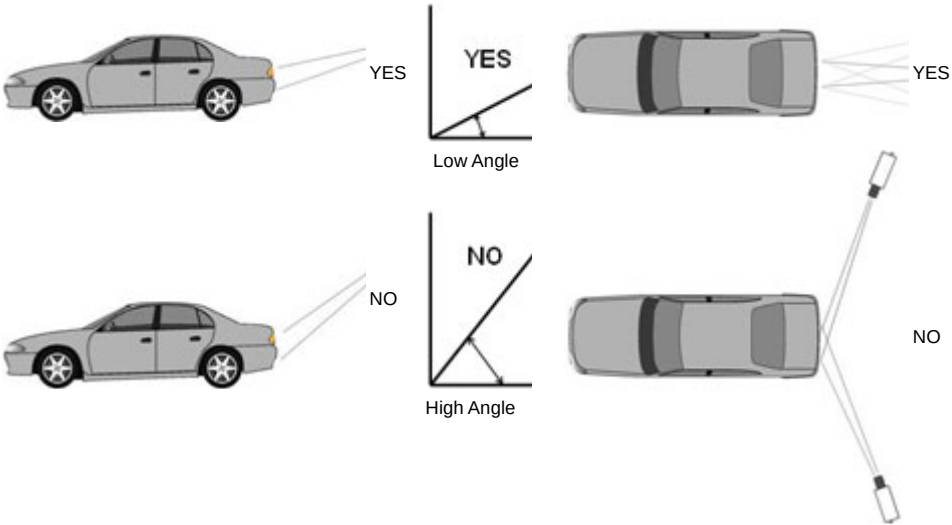
9. EXIT

User can return to the upper level of the OSD or save current setting and exit the OSD.
Press RIGHT or LEFT to choose the value and press Enter to validate.

RULES TO DESIGN LICENSE PLATE CAMERA

1. Location and Trajectory

Please note the following diagram:
In order to obtain the most optimal image, place the camera where it can obtain a clear, straight view of the license plate. A low angle is recommended to get the clearest license plate images.



2. Focusing and Shutter Speed

Focusing is the most important thing. It is recommended that the focusing should be done on the license plate of a parked vehicle. It will take time to focus. An example of shutter speed is shown below:



※ Shutter speed corresponding with car speed

Shutter Speed	Car Speed	Camera to Object Distance
1/60 ~ 1/120	6~12mph / 10~20km	100~130ft / 30~40m
1/150 ~ 1/300	18~37mph / 30~60km	50~65ft / 15~20m
1/310 ~ 1/500	37~50mph / 60~80km	15~30ft / 5~10m

* The table above is only for reference.

Shutter speeds of 1/250 and 1/500 are the recommended settings.
Please use the chart in the installation manual when selecting shutter speed.

3. 1/7 Screen Area

In order to ensure optimal images, make sure the camera is focus to that the license plate will take up at least 1/7 total width of the viewable screen area. If the drive way is too wide, you must add more cameras to cover the area.



4. High Resolution and FPS Setting for DVR

The quality of the DVR used is also an important factor for this application. A high-resolution DVR capable of recording at 20 to 30 FPS per channel is the minimum requirement for recording of SIR36-870VF650LP images. To have optimal recorded playback performance, a 30 FPS DVR is suggested.

RECOMMENDED CAMERA KEYBOARD CONTROLLER



PTZ-KB050



PTZ-KB050X



PTZ-KB250X

For night time OSD settings, it is better to use a keyboard controller. Please refer to keyboard controller's user manual for how to pull out the OSD menu from camera.

Quick setup for License Plate Capture (below OSD setting must be done at night).

After mounted the camera and focused with parked vehicle (Headlight On), Please enter to OSD Setting.



Enter LENS then Under MAIN MENU, configure the BRIGHTNESS value until you can see the License Plate.



After BRIGHTNESS configuration please have vehicle drive by to see Front and Rear License Plate, it may have an little blurring when vehicle is moving, please adjust Automatic gain control (AGC) value when during the vehicle driving.



Go back to Main Menu to Save the setting you was make by under selection of "9 EXIT" before you exit the OSD setup.

SPECIFICATIONS

Model	SIR36-870VF650LP
Image Sensor	1/3" Sony Exview HAD CCD II
Total Pixels	NTSC: 1028(H) x 508(V) / PAL: 1028(H) x 596(V)
Effective Pixels	NTSC: 976(H) x 494(V) / PAL: 976(H) x 582(V)
Resolution	700 TV Lines
Synchronization system	Internal synchronization
Scanning system	2:1 Interlace
S/N ratio	>48 dB (AGC off)
Electronic Shutter	NTSC: 1/60, FLK 1/100, 1/110~1/2000, 1/5000~1/10000 (1/10 step) sens-up(x2~x256, slow shutter)
OSD	Button / RS485 Control keyboard / Communication Pelco-C, Pelco-D, Pelco-P
OSD Language	ENGLISH, JAPANESE, CHINESE TRADITIONNAL, up to 16 countries
White Balance	AWB / AWC-SET / MANUAL / ATW
Mechanical IR Cut Filter	Yes
Min. Illumination	0.1 lux @ F1.6 / 0.00039 lux (Sens-up, 256X)
Gamma Correct	0.45 / 1
Video Output	1.0 Vp-p / 75 ohm composite
IR LED	36pcs IR LED (18pcs Piranha / 18pcs Reflection)
IR Distance	Up to 200ft / 60m
Lens Type	6.0~50.0mm Varifocal Lens / F1.6 (1.3 Megapixel)
Power Source	12V DC $\pm$ 10% / 1.5 A / 24V AC
Power Consumption	1100mA max @ Boot up 1250mA max @ IR on ; 260mA max @ IR off
Current	12V DC: 1.25A / 24V AC: 820mA
IP Rating	IP67
Operating Temperature	14°F~122°F / -10°C~50°C
Storage Temperature	-4°F~158°F / -20°C~70°C
Dimension (W x H x D)	3.94 x 7.81 x 8.23 inches / 100 x 198.5 x 224.2 mm
Net Weight	3.31 lbs / 1.5kg

**Specifications are subject to change without notice.*

PAL Version also available.

